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ABSTRACT

Recently there has been significant emphasis on changing teacher preparation programs to ensure that new teachers are prepared to use technology in the classroom. There are several illustrations of this increased attention across the nation, including: the U.S. Department of Education's "Preparing Tomorrow's Teachers" program; the "Teacher Preparation StaR Chart: A Self Assessment Tool for Colleges of Education," released by the CEO Forum on Education and Technology; and announcement by the national Council for Accreditation of Teacher Education of new performance-based standards to be used in evaluating teacher preparation programs for accreditation. Previously, technology training in most southern states has been targeted as professional development efforts for current (inservice) teachers. The focus is now on the technology competency of new teachers in state-approved teacher education programs. Georgia, Kentucky, Texas and Virginia have taken new directions to address technology skills of new teachers. The "A Plus Education Reform Act of 2000," enacted by the Georgia legislature effective July 2000, requires students in postsecondary teacher preparation programs to be "proficient in computer and other instructional technology applications and skills." In Kentucky, accredited teacher education institutions are required to prepare teachers to meet new standards, including those for technology, set by the Kentucky Professional Standards Board. The State Board for Educator Certification in Texas has developed standards for all new teachers regardless of teaching field or subject certification. In Virginia, the State Board of Education has adopted a requirement that all teachers will have to demonstrate proficiency in technology for license renewal starting in 2003. Other states across the region have taken different approaches toward implementing technology

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standards for teachers. Includes Teacher Technology Standards and Licensing Requirements (August 2000) for 16 southern states. (AEF)

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New Directions—Teacher Technology Standards

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Southern Regional Education Board
and
Southeast and Islands Regional Technology in Education Consortium (SEIR*TEC)

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New Directions – Teacher Technology Standards

SREB

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"The power of technology for student learning doesn't come from the presence of classroom computers or the Internet, the real power of technology in education will come when teachers have been trained well and have captured the potential of technology themselves. Teachers must model the behavior students are expected to learn."

Preparing Tomorrow's Teachers, August 2000.

In many states students are expected to be able to use technology before graduation from high school. Yet, teachers who may have had little preparation in using technology themselves are expected to teach them.

Until several years ago technology training for teachers focused on providing in-service training for teachers already in the classroom. In June 2000 the International Society for Technology in Education (ISTE) released *National Educational Technology Standards for Teachers* (NETS-T). These standards form the basis for many state teacher technology standards and are applicable for both experienced teachers and new teacher education graduates.

Recently, however, there has been significant emphasis on changing teacher preparation programs to ensure that new teachers are prepared to use technology in the classroom. There are several illustrations of this increased attention across the nation:

- The U.S. Department of Education's *Preparing Tomorrow's Teachers* (PT^3) program focuses on strengthening university teacher preparation programs. Projects range from efforts just beginning at colleges to extensive 3-year partnerships between universities and schools involved in teacher training, faculty leadership and mentoring in the use of technology.
- The *Teacher Preparation STaR Chart: A Self-Assessment Tool for Colleges of Education,* released by the CEO Forum on Education and Technology in January 2000, is a tool that colleges of education can use to assess their levels of readiness to use technology

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in teacher preparation programs. Numerous colleges of education have pledged to use the *STaR Chart* to guide improvements in their programs.

- The National Council for Accreditation of Teacher Education (NCATE) announced in May 2000 new performance-based standards that will be used in evaluating teacher preparation programs for accreditation. Institutions seeking NCATE accreditation of their teacher preparation programs will have to demonstrate that they have met these standards, which require the use of technology throughout teacher education programs and for institutional reporting and record keeping.

What is happening at the state level?

Previously, technology training in most southern states has been targeted as pro-fessional development efforts for current ("inservice") teachers. The focus is now on the technology competency of new teachers in state-approved teacher education programs. Georgia, Kentucky, Texas and Virginia have taken new directions to address technology skills of new teachers.

- The "A Plus Education Reform Act of 2000," enacted by the Georgia legislature effective July 2000, requires students in postsecondary teacher preparation programs to be "proficient in computer and other instructional technology applications and skills." New teachers and current teachers seeking recertification will have to demonstrate competence in technology use through a computer skills competency test. In lieu of this test, teachers may participate in the state's model *InTech* training at one of the state's Technology Training Centers or from an *Intech* training team approved by the State Board of Education.

- In Kentucky, accredited teacher education institutions are required to prepare teachers to meet new standards, including those for technology, set by the Kentucky Professional Standards Board. Both new and experienced teachers are expected to use technology to "support instruction, access and manipulate data, pursue professional growth and productivity, communicate and collaborate with colleagues, parents and the community, and conduct research." Assessment of these skills for experienced teachers is the responsibility of the local school district. Technology is infused throughout the teacher preparation curriculum, and new teachers are evaluated on their technology proficiency during their internship.

- The State Board for Educator Certification in Texas has developed standards for all new teachers regardless of teaching field or subject certification. These standards are based on the Texas Essential Knowledge and Skills for all students as part of their continued effort to link public education with teacher preparation and accountability,

and will eventually be included in new Examinations for the Certification of Educators in Texas (ExCET).

- In Virginia, the State Board of Education has adopted a requirement that all teachers will have to demonstrate proficiency in technology for license renewal starting in 2003. Institutions with approved teacher preparation programs are required to implement the new regulations for students entering their programs by Fall 2000 and students in those programs are required to demonstrate competency in technology use before completing their degree programs. Local district technology plans must incorporate state technology standards, with the goal that all instructional personnel will meet the standards by the 2002-2003 school year. These regulations were adopted as a result of the availability of technology in the classroom for use by students to ensure they can meet the technology standards embedded in the Virginia Standards of Learning for students.

Other states across the region have taken different approaches toward implementing technology standards for teachers. Since 1999, new graduates in North Carolina must pass the assessments to receive their initial teaching licenses. North Carolina had first linked technology proficiency to renewal of teacher licenses in 1998 and is now focusing on assessing new teachers' skills. In Maryland, approved teacher preparation programs are required to incorporate technology instruction; the state is now piloting performance assessments to evaluate the Maryland Technology Outcomes. Alabama and Louisiana are developing new teacher technology standards. Eight other states in the region (Arkansas, Delaware, Florida, Mississippi, Oklahoma, South Carolina, Tennessee and West Virginia) have also drafted or adopted teacher technology standards.

Conclusion

Over the past decade states have made substantial investments for technology in schools and need to know that these investments are being well used. States have also raised their standards for student performance. However, teachers are ultimately responsible for wise use of technology in the classroom. In order for students to get the best use from technology, they need teachers who are well prepared to use a variety of teaching methods.

Technology standards for new and experienced teachers support states' efforts to link teacher preparation, accountability and student achievement goals. Focus on increasing technology standards in teacher preparation programs and linking teacher performance on these standards to certification requirements helps ensure that teachers are prepared to use technology in combination with other tools to improve student achievement.

Teacher Technology Standards and Licensing Requirements, August 2000

State	Action	Application of Standards
Alabama	The state has established standards for technology competence based on NCATE and ISTE standards. Baccalaureate teacher-preparation institutions are required to include technology. Alabama offers a Technology Scholarship Program for Alabama Teachers, which provides assistance with tuition and fees for Alabama teachers pursuing technology training.	The Teacher Education chapter of the Alabama Administrative Code (Chapter 290-3-3) requires use of technology through teacher education programs to instruct preservice teachers as well as model teaching methods using technology. Assessment of technology competencies is not required in order to receive initial or continued licenses, although technology courses are available as options for teachers seeking license renewal. Technology standards are used for planning and professional development.
Arkansas	The State Board of Education adopted (June 2000) teacher standards for technology based on ISTE standards. Also, the Board approved amendments to the Professional Development Rules and Regulations requiring all licensed educators in the state to earn a minimum of six (6) clock hours annually of professional development training in technology.	Standards initially will affect only new teachers, with a phase-in that will require teachers seeking license renewal to reach standards, which will be assessed based on performance evaluations.
Delaware	Delaware is developing Professional Teaching Standards that include a technology component http://www.doe.state.de.us/DPIServices/teacher.htm#technology	There are currently no specific plans to include technology competencies in certification requirements except as part of the Delaware Professional Teaching Standards.
Florida	Technology competencies are interwoven into Florida's pre-service education programs. Several teacher-preparation institutions offer specialized training in instructional technology. Regional Education Service Cooperatives have Instructional Technology Training Centers for in-service training.	Technology courses are offered but not required for initial licensure. Teachers are permitted to substitute technology training for subject-area training for license renewal.
Georgia	Georgia's "A Plus Education Reform Act of 2000," approved by the General Assembly became effective July 2000 and requires pre-service and in-service teachers seeking recertification to demonstrate technology competence. Professional development objectives are correlated with ISTE standards and used by school districts to plan professional development.	Georgia's Professional Standards Commission is reviewing the technology licensure issue and the role that technology standards will play in initial and renewed licensure for teachers in the state. Implementation plans are expected to address competency standards relative to new state legislation.
Kentucky	The Kentucky Board of Education Teacher Standards for Preparation and Certification (June 1999) includes technology standards for both new and experienced teachers. The *Kentucky Master Plan for Education Technology* recommends that competencies for both staff and students must be incorporated into the K-12 curriculum. http://www.kde.state.ky.us/otec/epsb/standards/new_teach_stds.asp and http://www.kde.state.ky.us/otec/epsb/standards/exp_teach_stds.asp	Teacher preparation institutions in Kentucky are required to prepare teachers to meet the standards set by the Kentucky Professional Standards Board. Eleven of 27 state-approved teacher preparation institutions in Kentucky are NCATE accredited and must comply with NCATE technology requirements. Technology competency is required and is to be evaluated through local district evaluations of certified personnel.
Louisiana	The Board of Regents and the Board of Elementary and Secondary Education formed the Governor's Blue Ribbon Commission on Teacher Quality in 1999 to improve teacher quality in Louisiana. This Commission has identified global issues related to teacher certification and teacher preparation programs in Louisiana http://198.176.252.119/TE/BRC/report1.pdf	The Louisiana Teacher Assessment Program for beginning teachers includes a technology component. Future teacher education policies will be developed consistent with recommendations of the Blue Ribbon Commission on Teacher Quality.

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Teacher Technology Standards and Licensing Requirements, August 2000 (continued)

State	Action	Application of Standards
Maryland	Currently, 19 of the 22 approved programs require a computer course or have technology infused through several courses. Maryland is piloting performance assessments for teachers to evaluate the recently developed Maryland Technology Outcomes which were developed by a state advisory group composed of two- and four-year institutions of higher education, local school systems, the Maryland Higher Education Commission and the Maryland State Department of Education. Eventually, to be a state- approved teacher preparation program, institutions must show that the all graduates can pass the performance technology assessments. Performance assessment portfolios incorporating the technology competencies will be developed and made available electronically. The Maryland Technology Outcomes are available at: http://www.smcm.edu/msde-pt3/index.htm	State standards for technology proficiency are used in the state review and approval of teacher education programs. Performance-based assessments of pre-service teachers were approved in May 1995, and technology is identified as a critical area for teacher preparation.
Mississippi	The Mississippi Department of Education has established state standards for technology proficiency for both teachers and school administrators that have been adopted by the State Board of Education. http://c2t.mde.k12.ms.us/tasl/teacherstandards.html http://c2t.mde.k12.ms.us/tasl/adminstandards.html	Teachers may take courses either in their teaching specialty or in technology for license renewal. Technology standards have been adopted by the State School Board. Individual school districts can require teachers to meet the standards, others offer them only as recommendations. The technology standards form the basis for professional development planning.
North Carolina	Each of the public universities offering teacher education has hired a technology specialist to work with faculty and pre-service teachers to help them achieve the necessary competencies. http://www.ofps.dpi.state.nc.us/OFPS/hm/te/techcomp.htm	Effective 1999, for each five-year license renewal, educators are required to complete three to five credits in technology course work; developing methods to assess technology competencies for current teachers is the responsibility of the local education agencies. In spring 1997, all teacher-education institutions began administering assessments to pre-service teachers as the first step in developing an assessment instrument for initial licensure. These assessments are now for teachers who will receive their initial teaching license.
Oklahoma	In 1997, House Bill 1549 called for the Oklahoma Commission for Teacher Preparation (OCTP) to assume responsibility for ensuring quality teacher preparation. The Oklahoma State Regents for Higher Education issued an institutional warranty in May 2000 guaranteeing that the state's teacher education graduates will meet 15 general competencies.	Technology standards are included in the Oklahoma General Competencies adopted by the State Board of Education in January 1997. Oklahoma has adopted NCATE accreditation standards for approval of teacher preparation programs.
South Carolina	Teacher-training institutions in South Carolina are encouraged to include courses emphasizing information technology applications in the teacher-training process. The South Carolina Plan for Educational Technology as updated in 1998 includes adoption of ISTE NETS as the state's technology standards. Extended discussions regarding teacher qualifications and certification are beginning between the Department of Education (Teacher Quality and Technology offices) and higher education institutions. Additional changes are expected to licensing requirements overall, in addition to technology requirements. http://www.state.sc.us/sde/educator/techplan/tecteach.htm	Effective July 2000, teachers are required to demonstrate technology proficiency, as certified by their district, for each five-year certificate renewal cycle. District plans for preparing teachers to meet this requirement must be approved by the SDE prior to district annual expenditure of technology funding. Substantial funds are provided annually for technology and technology professional development. Teachers needing coursework are permitted to take technology-oriented course work in lieu of course work in their discipline for license renewal.

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Teacher Technology Standards and Licensing Requirements, August 2000 (continued)

State	Action	Application of Standards
Tennessee	State-developed technology standards are being included in teacher preparation programs.	Technology standards for teachers have been included in requirements for initial licensure since 1998. These are recommended but not required for license renewal.
Texas	The State Board for Educator Certification (SBEC) is developing teacher technology standards for Technology Applications for all beginning teachers. These standards are for all teachers regardless of area of specialization. http://www.sbec.state.tx.us/certstand/new_standards_intro.htm	Following a period of public comment, the standards will form the basis for new Examinations for the Certification of Educators in Texas (ExCET).
Virginia	The State Board of Education adopted a requirement that all teachers will have to demonstrate proficiency in technology for license renewal starting in 2003. http://141.104.22.210/VDOE/Compliance/TeacherED/tech.html	All teachers will have to demonstrate proficiency in technology for license renewal. School divisions will determine assessment of proficiency. Licensure requirements for new teachers are aligned with the *Virginia Standards of Learning*.
West Virginia	According to Legislative Rule 126 (Appendix B) of the Board of Education, West Virginia Board of Education approved teacher preparation programs "must ensure that candidates have the requisite knowledge and skills for effective use of educational technology in instruction and content specialization." Http://wvde.state.wv.us/policies/p5100.html	Technology specifications based on standards developed by ISTE and NCATE must be included in state-accredited teacher preparation programs.

ISTE is the International Society for Technology in Education. NCATE is the National Council for Accreditation of Teacher Education. Teacher education programs seeking new or renewal accreditation by NCATE must incorporate new standards, including technology standards, effective Fall 2001.

Information provided by state departments of education, 2000.

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Resources

Experienced Teacher Standards for Preparation and Certification, Frankfort, Kentucky: Kentucky Education Professional Standards Board, June 1999 http://www.kde.state.ky.us/otec/epsb/standards/exp_teach_stds.asp.

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